Qualified Products List

Qualified Manufacturers List

General Qualification Information

SOURCING AND QUALIFICATIONS UNIT
DEFENSE SUPPLY CENTER COLUMBUS
COLUMBUS, OHIO

June 2008

PREAMBLE

This document has been prepared by the Sourcing and Qualification Unit to provide manufacturers with the steps necessary for the qualification of their products, processes, and materials.

The Qualified Products List (QPL) and Qualified Manufacturers List (QML) Program offers many advantages and opportunities to both manufacturers and users of electronic components. QPL/QML products provide superior performance, quality and reliability from a known cadre of qualified manufacturers. QPL/QML products provide fewer Diminishing Manufacturer Sources (DMS) problems and a lower cost of ownership. In addition the QPL/QML program maintains configuration control and assures the military system is logistically supportable throughout its life cycle.

I hope this document provides an overview of the qualification program and helps you get started in qualifying your products. The Sourcing and Qualification Unit stands ready to assist you in all of your component questions and in getting started in the qualification program.

Any questions or clarification concerning portions of this document should be directed to:

U.S. Mail

Defense Supply Center Columbus
ATTN: DSCC-VQ
Joseph Gemperline
P.O. Box 3990
Columbus, OH 43218-3990

Private Carriers (e.g.,. UPS, FED EX, etc.)

Defense Supply Center Columbus
ATTN: DSCC-VQ
Joseph Gemperline
3990 E. Broad Street
Columbus, OH 43213

Phone: (614) 692-0663
Fax: (614) 692-6942
e-mail: Joseph.Gemperline@dla.mil

We thank you for your participation and support of the DoD Product Qualification Program.

Sincerely,

JOSEPH GEMPERLINE
Chief
Sourcing and Qualification Unit

INTRODUCTION

This booklet has been generated to provide manufacturers with the steps involved in obtaining a qualification listing for products, processes, and materials.

Certified manufacturers will find it useful as a reference guide and non-certified manufacturers will be challenged by the many advantages and opportunities available to the QPL/QML supplier of high reliability military products.

This booklet also provides beneficial information to the Original Equipment Manufacturers (OEMs), Systems Program Offices (SPOs), etc. on the advantages of procuring the highest quality and reliability level products available.

The information in this document is supplementary to Provisions Governing Qualification (SD-6) and Appendix AP2 of Defense Standardization and Specification Program Policies, Procedures, and Instructions, (DoD 4120.24-M). It does not supersede or waive the provisions of these documents or of the applicable military or federal specifications.

Since this booklet is general and specific requirements may vary by specification. It is important that any interested party contact the assigned engineer for the applicable technology to discuss the specific qualification requirements that will apply.

This information applies to those military and federal specifications that specify Defense Supply Center Columbus (DSCC) as the qualifying activity.

CAUTION: The information in this booklet is of a general nature because it covers a wide cross section of QPL/QML programs. For the specific qualification requirements for a given technology, the applicable specifications and standards must be reviewed. In addition we suggest that you call the applicable qualification point of contact to discuss your specific qualification plans and make sure you fully understand the applicable requirements. Failure by the manufacturer to fully understand the qualification requirements prior to qualification testing may result in unnecessary testing, non-compliant testing, and delay qualification approval.

TYPES OF QUALIFICATION USED

Qualified Manufacturers List (QML)

The QML lists the processes and materials each manufacturer has demonstrated a capability to manufacture reliably and in compliance with the manufacturer's requirements and the military specifications. Many different qualified products can be produced using the QML listed processes and materials.

Qualified Products List (QPL)

The QPL lists specific part numbers, which the manufacturer has demonstrated the capability to manufacture reliably and in compliance with his own internal requirements and the military specifications.

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DSCC-VQ WEB SITE

DSCC-VQ: SOURCING AND QUALIFICATION UNIT

Defense Supply Center Columbus, 3990 East Broad Street, Columbus, OH 43218-3990

http://www.dscc.dla.mil/offices/sourcing_and_qualification/

The Sourcing and Qualification web pages were originally developed mid 1995 to provide a user-friendly approach to downloading the Unit's Query Tool programs. The web pages have since been expanded to disseminate much of the public information that was formerly distributed on paper. Our Unit continues to support those customers who rely on paper documents, but we are developing cost effective real-time alternatives to the traditional paper documents, and providing them on the World Wide Web.

General features of the VQ web pages:

- Most pages and graphics are very small for fast transfer to the user's computer
- Pages have been written to utilize the latest features of the Hypertext Markup Language (HTML) language Version 3.2. Pages are best viewed with Netscape Navigator 3.01, or Microsoft's Internet Explorer 3.02. Pages that do not use HTML Tables are backward compatible to the most basic of web browsers.

Items currently available on the VQ web pages:

- General information from the Unit office including the mission, organizational chart, directions to DSCC, and information for visitors.
- General information for each of the Unit's four Teams (**Custom Devices**, **Hybrid Devices**, **Passive Devices**, and **Electronic Devices**). Information includes program information, contacts, available downloads, audit schedules, and QML/QPL status.
- Information about the Unit's **ISO 9000 value-added audit program** including background information, audit information, and the DSCC-VQ ISO 9000 Registration list.
- Reports and information including progress reports, program initiatives, newsletters, and program updates.
- Information about the Unit's Commercial Laboratory Suitability Program (Includes List of Commercial Laboratories Suitable for Testing Military Devices).
- An **on-line part search** capability that encompasses QML-38534, QML-38535, and QPL-19500. Downloading is not required.
- Discussion forums for answering manufacturer's questions about the program and encouraging information exchange between customers.
- A Guest Book for user's general comments about the web site.
- **Qualified Manufacturers List (QML)** and **Qualified Products List (QPL)** documents available in the Adobe Portable Document Format.
- A web page where customers can add contact information so that they may be notified of significant web site changes.
- Automated Notification System for updated QMLs/QPLs available in Adobe Acrobat format (send e-mail to Ned Raybould at Edward_Raybould@dscc.dla.mil, with your e-mail address, telephone number, name, and list of QPLs and QMLs you wish to be notified of when changes are made).
- **Downloadable Query Tool applications** that provide searching and filtering functionality for QML-38534, QML-38535, and QPL-19500. These are computerized alternatives to the hard copy documents.

Future initiatives for the VQ web pages:

- More QPLs available through the on-line part search engine
- Other features created at a user's request

For further information about the Sourcing and Qualification Unit web pages, contact:
VQWebTeam@dscc.dla.mil
Ned Raybould, 614-692-0582, Edward.Raybould@dla.mil
Rick Barker, 614-692-0596, Richard.Barker@dla.mil

SECTION I

GENERAL INFORMATION

The activity responsible for qualification is listed in Section 6 of the applicable Military Specification. If Section 6 references DSCC, Code CC the following points of contacts are applicable:

Defense Supply Center Columbus
ATTN: DSCC-VQ
P.O. Box 3990
Columbus, OH 43218-3990

Qualifications and Sourcing Unit (VQ)	Mr. Joseph Gemperline Phone: (614) 692-0663 or (614) 692-9130 FAX: (614) 692-6942 e-mail: Joseph.Gemperline@dla.mil
Custom Devices Team (VQC) (Microcircuits)	Mr. Mike Adams Phone: (614) 692-0662 FAX: (614) 692-6942 e-mail: Michael.Adams@dla.mil
Electronic Devices Team (VQE)	Mr. Ray Kolonchuk Phone: (614) 692-0621 FAX: (614) 692-6942 e-mail: Raymond.Kolonchuk@dla.mil
Hybrid Devices Team (VQH)	Mr. Joe Gemperline Phone: (614) 692-0663 FAX: (614) 692-6942 e-mail: Joseph.Gemperline@dla.mil
Passive Devices Team (VQP)	Mr. Alan Will Phone: (614) 692-0619 FAX: (614) 692-6942 e-mail: Alan.Will@dscc.dla.mil
Base Locator	Phone: (614) 692-3131

DSCC POINTS OF CONTACT (POC)

FEDERAL STOCK CLASS (FSC)	ITEM VQ-SOF-DESCRIPTION	TEAM POC
1650	Aircraft Hydraulic, Vacuum and De-icing System Components	VQE,VQP
2530	Vehicle Brake, Steer Axle, Wheel and Track Components	VQE,VQP
2910	Engine Fuel Systems Components, Except Aircraft	VQE
3010	Torque Converters and Speed Changers	VQE
3030	Belting, Drive Belts, Fan Belts, and Accessories	VQP
3120	Pulleys, Groove, Antifriction Bearing, Grease Lubricated, Aircraft	VQE
4140	Fans, Air Circulators and Blower Equipment	VQP
4720	Hose and Tubing, Flexible	VQP
4730	Fittings and Specialties; Hose, Pipe and Tube	VQP
4810	Valves, Powered	VQE
4820	Valves, Non-powered	VQE
5180	Specialized Equipment, Kits, Outfits/Hand Tools	VQP
5815	Teletype and Facsimile Equipment	VQP
5835	Sound Recording and Reproducing Equipment	VQP
5905	Resistors	VQP
5910	Capacitors	VQP
5915	Filters and Networks	VQP
5920	Fuses, Arrestors, Absorbers and Protectors	VQP
5925	Circuit Breakers	VQP
5930	Switches	VQP
5935	Connectors, Electrical	VQP
5945	Relays, Solenoids	VQP
5950	Coils, Transformers	VQP
5955	Oscillators, Piezoelectric Crystals	VQP
5960	Electron Tubes, Associated Hardware	VQE
5961	Semiconductor Devices, Associated Hardware	VQE
5962	Microcircuits, Electronic	VQC,VQH
5965	Headsets, Handsets, Microphones, Speakers	VQP
5970	Electrical Insulators, insulating Materials	VQE
5980	Optoelectronic Devices, Associated Hardware	VQE,VQP
5985	Antennas, Waveguide, Related Equipment	VQE,VQP
5995	Cable, Cord, Wire Assemblies; Communications Equipment	VQP
5998	Electrical, Electronic Assemblies; Boards, Cards, Associated Hardware	VQE
5999	Miscellaneous Electrical, Electronic Components	VQP
6010	Fiber Optic Conductors	VQP
6015	Fiber Optic Cables	VQP
6021	Fiber Optic Switches	VQP
6030	Fiber Optic Devices	VQP
6060	Fiber Optic Interconnectors	VQP
6145	Wire and Cable, Electrical	VQP
6625	Electrical and Electronic Propulsion Measuring, Test Instruments	VQP
6685	Pressure, Temp, and Humidity Measuring and Control Instruments	VQP
9905	Signs, Advertising, Displays, and ID Plates	VQP

OBTAINING COPIES AND INFORMATION

Copies of the applicable specification and standards along with the latest QPLs or QMLs can be obtained and downloaded from the DSCC-VQ web site. In addition applicable forms, reports or more specific information on the qualification program for a specific technology can be quickly obtained from the DSCC-VQ web page.

http://www.dscc.dla.mil/offices/sourcing_and_qualification/

Copies of applicable Military Specifications and Standards, DoD 4120.24-M, SD-6, QPLs, and QMLs may be obtained from http://assist.daps.dla.mil

Copies of ANSI/NSCL-Z540.3-2006 (*Requirements for the Calibration of Measuring and Test Equipment*) may be obtained from http://www.ncsli.org/:

Copies of ISO 10012: 2003 (Measurement management systems -- Requirements for measurement processes and measuring equipment) may be obtained from :

SECTION II

QUALIFICATION STEPS

STEP 1: INITIAL PREPARATION

Qualification is a process whereby a manufacturer demonstrates that his products, processes or materials will meet the specified military performance, quality and reliability requirements. Initially, through documentation, a manufacturer establishes a complete quality program that will assure the products will continually conform to the specified requirements. The program is then implemented, monitored and corrected to ensure the required support systems, processes, materials, and controls are properly working. DSCC-VQ performs an onsite audit of the manufacturer's facilities to assure that the quality support system and controls are in place and working. This is accomplished by reviewing documentation and data, observing processes and tests, reviewing the actual manufacturing flow from incoming material to product shipment, and interfacing with personnel. After the DSCC-VQ audit is successfully passed the manufacturer is authorized to perform the actual qualification testing. The qualification requirements are stipulated in the applicable military specifications and standards. After the qualification is successfully accomplished, the manufacturer's products, processes or materials are listed in the applicable QPL or QML. Additionally the manufacturer must establish a program as specified in the applicable military specification and standards to assure and demonstrate continuous compliance with the requisite performance, quality and reliability requirements. NOTE: The responsibility for continuous compliance to all specifications and standards rests with the manufacturer and laboratory. They are responsible for implementing all changes to the specification and standards as required.

STEP 2: REQUESTING AN AUDIT/VALIDATION

To begin the qualification process, the manufacturer must first contact the DSCC-VQ office for his product type. DSCC-VQ will then send a preaudit letter, which specifies what the manufacturer must submit to DSCC-VQ for review prior to scheduling an audit. An example of the preaudit letter can be obtained at the web site for the particular technology. The manufacturer may be requested to schedule a meeting with DSCC-VQ to discuss the qualification program and the required preaudit documentation and data.

The preaudit letter is intended to ensure the following items:

- The manufacturer has an effective quality program.

- The manufacturer has ensured that all military requirements are met.

  Note: This can be best achieved by cross-referencing the manufacture's procedures to the military requirements. The manufacture must be able to clearly demonstrate how the specified requirements are met.

- The manufacturer has a documented and controlled operation. Critical documents will be reviewed during the preaudit phase to assure compliance with the applicable specifications and standards.

- The manufacturer has a controlled manufacturing flow.

- The manufacturer is knowledgeable in the military specification and standard requirements and has a quality program to assure continuous compliance to those requirements.

- The manufacturer is meeting internal requirements as well as the military requirements.

- The manufacturer has a current functioning (implemented) program with supporting data.

- The manufacturer's testing (sequence and schedule) is in full compliance with the applicable specifications and standards.

In addition, DSCC-VQ requires that:

- The manufacturer has a self-audit/assessment program to maintain the effectiveness of their quality program and compliance to the applicable military specification performance requirements. An effective self-assessment system results in increased confidence in the manufacturer's quality assurance program by DSCC-VQ, which may reduce DSCC-VQ oversight and audits of the manufacturer's facility.

- Quality program documentation, as well as other data, to help support the accomplishment of the items listed above.

The advantages to having the preaudit requirements are:

- Elimination of poor usage of manpower and funds.

- Performing timely, effective, and successful audits.

- Quick turnaround from the audit to obtaining QML/QPL listing.

STEP 3: MANUFACTURER AUDIT/VALIDATION

The next step in the qualification process is for DSCC-VQ to perform an audit/validation at the manufacturer's facility to assure compliance to the military requirements. The goal of the audit/validation is for DSCC-VQ to verify that the manufacturer has implemented a working quality program that incorporates all of the specified military performance, quality, reliability requirements per the applicable specification. The audit will be conducted on a sample basis to provide the audit team with an acceptable confidence level that the manufacturer has a program for building high quality product, on a continual basis, that will conform to the specified performance, quality and reliability envelope, without the need for constant government oversight.

An audit/validation team (typically 2-4 auditors), made up of QPL/QML experts from DSCC-VQ and other agencies will perform the audit over a 2-5 day period. The team will apply a sampling technique to assure an acceptable confidence level that all requirements specified in the applicable military specification, drawings and/or standards, are met. The auditors will question and observe operators

and examine actual product as well as review records, operating procedures, and data. All areas from incoming materials to product shipment are subject to review.

Some areas emphasized during the audit/validation include:

- Process parameters are specified and controlled to assure repeatability of processing.
- Statistical process control (SPC) and/or process monitors are used where beneficial.
- Test methods are documented describing how to perform the tests using the manufacturer's own equipment. Test methods must meet the requirements of MIL-STD-883, MIL-STD-202, MIL-STD-750, or applicable testing standard.
- A training program exists and is adequately documented which trains the operators and technicians to the internal operating procedures and keeps them current as changes occur.
- Incoming inspection is performed on piece parts, by either the manufacturer or his vendor, prior to being released for production.
- Product is not shipped to the customer or to the next level of assembly until qualification testing and Conformance Inspection (CI) have been performed and verified.
- For QML, a conversion of customer requirements system is implemented that reviews the customer's Source Control Drawings (SCD), Standardized Microcircuit Drawings (SMD), Performance Specification Sheets, or detail specification for compliance to the military requirements and to the manufacturer's capability. In addition, the manufacturer must verify they are certified and qualified for the processes and materials to be used.
- The manufacturer adheres to baselines, flowcharts, design rules, and internal procedures.
- A change control review is in place to identify the impact of any changes. This includes determining if qualification testing is required to be performed and whether notification to DSCC-VQ or the customer is required.
- An ongoing self-audit program is implemented to ensure compliance to the military and customer specifications as well as to the manufacturer's internal specifications.
- Electrostatic discharge (ESD) and clean room controls are in place if applicable.

During the audit, DSCC-VQ auditors will document their observations and provide them to the manufacturer during the exit debriefing. The manufacturer must respond to all observations identified as deficiencies within 30 days, unless otherwise noted.

Once the manufacturer corrects all deficiencies, letters of Certification and Laboratory Suitability will be issued to the manufacturer. There may be more than one assembly/processing line at the facility; however, only the area audited is considered for manufacturer certification. **These DSCC-VQ letters constitute the official notification of a "Manufacturers Certification" and "Suitability".**

NOTE: Certification: A DSCC letter that is issued to show that the manufacturer has demonstrated to DSCC-VQ that a quality management (QM) program is implemented and working. The QM program must be baselined and meet all specified military requirements. **Only the specific manufacturing production line with an official DSCC Certification may manufacture QPL/QML. This applies to only the specific certified manufacturing site.**

NOTE: Laboratory Suitability: A DSCC letter that is issued to show that the manufacturer has the capability to test in house to the applicable technology test methods such as; MIL-STD-883 for microcircuits, MIL-STD-750 for semiconductors, MIL-STD-202 for passive components, or other applicable test standards.

Optional areas to be considered but are not required

- The manufacturer may need to consider attending Non Government Standard bodies such as; the Joint Electron Device Engineering Council (JEDEC) for microcircuits, semiconductors, etc., in order to participate in the development and stay abreast of the upcoming military specification changes. This will assure timely implementation of all revisions or changes to the applicable specifications, drawings and/or standards. **It is the manufacturer's responsibility to implement all changes to the applicable military specifications and standards when they are issued**.

STEP 4 QUALIFICATION

After a facility certification, and laboratory suitability has been successfully achieved, the next step in the process is to qualify the processes, materials, or products which were audited by the government team. Qualification is accomplished by: The manufacturer builds products using the certified and baselined processes and flows and then subjects these products to the strenuous environmental and electrical qualification tests as specified in the applicable military specification and standards, (this is known as qualification testing). These qualification tests replicate the military performance, quality and reliability envelope, which the product must operate. All tests must be performed by a manufacturer or laboratory that have DSCC suitability. Upon successful completion, a QML or QPL listing is granted. Representative product is periodically tested to verify continued conformance to the military performance, quality, and reliability envelope. The following items must be considered during the qualification:

- For QPL selecting the product or products that are going to be qualified. For QML selecting the product, test vehicles, test structures or, worst case, surrogate device, etc. that are representative of the processes, materials, and technology to be qualified. NOTE: The manufacturer and DSCC-VQ should discuss and agree upon the processes, materials and/or products which will be subjected to the qualification testing to avoid downstream problems that would cause the qualification report to be delayed or rejected. Some stock classes require an application for qualification testing before the manufacturer can begin qualification testing.

- Submitting an application for qualification testing (known as an Authorization to Test – ATT) to DSCC-VQ. The ATT for qualification testing must specify the following, as a minimum:

1. Product to be Tested
2. Baseline Flows with Travelers that will be used.
3. Testing to be Performed (100% Screen and Sample)
4. Sample Sizes

5. Wafer Fabrication Locations
6. Assembly Locations
7. Test Locations (including any outside test laboratories to be used) **NOTE: All testing must be performed by a manufacturer or test laboratory with DSCC suitability.**

NOTE: Additional criteria and specifics can be discussed with the applicable DSCC-VQ team. An application for qualification test may be obtained on our web site.

- Manufacturing the qualification lot (lot size predicated by specification requirements), using the approved certified/approved flows, baselines and using the controls and procedures that were previously audited and approved.

- Performing the testing per the applicable military specifications, drawings and standard as approved in the test plan. All testing must be performed at a laboratory with DSCC-VQ laboratory suitability (see Section VI and XIV). Successful completion of these environmental, mechanical, and electrical tests verifies the design will meet the required performance, quality, and reliability envelope. The manufacturer shall review and approve test data prior to submitting to DSCC-VQ.

  NOTE: Qualification testing at all laboratories may be monitored by a Government Quality Assurance Representative (QAR). DSCC-VQ will delegate the QAR to monitor/witness the qualification testing. The QAR will select the tests he wishes to witness in addition to any specified by the VQ qualification team. The testing facility must schedule those tests at a time agreeable to the QAR. The Government QAR signature verifies the test report, but it does not constitute government approval of the test report.

- Submitting the test data and report to DSCC-VQ for review and approval. The qualification report format should be discussed with the DSCC-VQ contact person.

- Listing of the manufacturer and products and/or processes and materials on the applicable QML/QPL after a successful DSCC-VQ review and approval of the test data and test report. A notification of qualification letter will be issued by DSCC-VQ stipulating the manufacturers products, processes and materials have been qualified. **Until such an official "Notification of Qualification Letter" is issued by DSCC-VQ, the manufacturer is not qualified and cannot certify, mark, ship or advertise in any manner whatsoever that they are qualified.** NOTE: **Whenever a manufacturer certifies, provides Certificate of Conformance or makes products in accordance into the QPL/QML, all requirements must be met.**

NOTE: Only the manufacturers and users can make the qualification program work. Each manufacturer must educate his customers and make QML/QPL products available. Each military user must enforce the use of qualified products through contractual requirements. Only in this way can all of us realize the full benefits of the qualification program.

NOTE: Qualification tests replicate the military performance, quality and reliability envelope throughout the environment the product must operate. Representative product are requested to be periodically tested to verify continued conformance to the military performance, quality, and reliability envelope. The manufacturer is totally responsible for continually meeting all military requirements that includes monitoring revisions and all amendments to the applicable specifications and standards and meeting all such changes.

- Testing of representative product is then performed periodically in accordance with the applicable military specification, drawing or standard to verify continued conformance to the military performance, quality, and reliability envelope.
  (See Step 5 below)

STEP 5: CERTIFICATION/QUALIFICATION-MAINTENANCE

This section VQ-SOF-ribes the long-term partnership between DSCC-VQ and the manufacturer. This partnership is required to maintain the certification/qualification status. The items listed below are the basic items that must be submitted to DSCC-VQ. Additional requirements and procedures may be specified in the applicable general specification, drawing or standard for the particular technology being qualified.

NOTE: The QPL/QML manufacturer should develop a distribution system to assure that QPL/QML products are readily available to the customer.

- The manufacturer maintains the controls and quality levels for the quality programs, product design baselines, manufacturing flows, processes, materials, and products which were audited and approved.

- The manufacturer builds QPL/QML products only as specified in the DSCC official certification (approved flows and testing procedures).

- The manufacturer shall perform self audits to assure continuous compliance to the specified military requirements. Results are submitted to DSCC-VQ on a yearly basis unless otherwise specified by DSCC-VQ.

- The manufacturer keeps the qualification listing current and performs qualification testing for product design changes when required.

- The manufacture shall maintain the quality program and/or qualification program plan.

- The manufacture shall notify DSCC-VQ and customers of any product failures.

- The manufacturer shall keep DSCC-VQ informed of all major changes. This includes changes to the product design, quality program plan, approved flows, product baselines, test procedures, etc. as specified in the applicable specification/standard or as approved in the QPL/QML Program Plan. Requalification will be determined based on the type and significance of the changes.

- The manufacturer shall **at all times** stay current with changes in the applicable military performance specifications, drawings and/or standards.

- The manufacturer shall perform all 100% screening tests as specified in the applicable specification, drawing and/or standard

- The manufacturer shall perform all periodic sample testing as specified in the applicable specification, drawing and/or standard. These periodic tests are sometimes called Quality Conformance Inspection (QCI) or Conformance Inspection (CI) testing.

- The manufacturer shall notify DSCC-VQ prior to **any** plant moves that will impact QPL/QML products. Requalification will be determined based on the scope and extent of the move. (See Section III and VI).

- The manufacturer shall be subject to periodic reaudits by DSCC-VQ. Reaudits are typically performed every two (2) years unless extended or shortened by DSCC-VQ. Drop-in or problem audits may be performed at anytime by DSCC-VQ without notice.

- The manufacturer shall submit a retention of qualification report to DSCC-VQ as required per the applicable technologies' certification and qualification procedures. DSCC-VQ will establish the dates of the reporting period. The report is due at DSCC-VQ within 30 days after the end of the period, unless otherwise specified in the military specification. These dates are specified in the first qualification letter to a plant for each specification. A manufacturer who has not been assigned a reporting date for his qualified products should request one from DSCC-VQ. When there has been no production, a report must still be submitted which indicates no production has occurred for all qualified styles. If a specification does not contain a retention of qualification requirement (paragraph 4-209 of DoD 4120.24M), every two years a certification (DD Form 1718) for each plant listed on the QPL is required. The certification will be signed by a responsible official of the company.

•• Failure to submit this retention report by the specified reporting date is cause to remove the products from the QPL/QML. SD-6 provides that the manufacturer need not be notified in advance of the removal. Therefore, it is the manufacturer's responsibility to prepare the certification in time to meet the report due date.

•• This retention report, as a minimum, will cover qualified products and whether or not they were produced for a specified time period. The following information is required on the applicable form or attachments to it:

••• A list of qualified products (for QPL) and processes/materials (for QML) that were not produced by the manufacturer in the reporting period for which the plant has the capability to produce and the manufacturer wishes to retain on the QPL/QML. Include the last lot acceptance date and quantity for each product.

••• A list of qualified products (for QPL) and processes/materials (for QML) whose production has been discontinued and should be removed from the QPL/QML. When a manufacturer has decided to discontinue production of a product listed on a QPL/QML, DSCC-VQ must be notified immediately so the appropriate "end of life" notification can be given to customers (typically six months minimum).

●●● A statement that the products (for QPL) and processes/materials (for QML) which are to remain on the QPL/QML are being or will be made under the same conditions as originally qualified (i.e., same processes, materials, construction, designs, manufacturers part numbers, or designation) and meets all the requirements of the current issue of the performance specification, and associated documents.

●●● A separate certification for each applicable general specification and company plant.

- CAUTION: Failure to complete any maintenance requirement will be cause for removal from the applicable QPL/QML and/or possible GIDEP Alerts and product recalls.

- NOTE: Some stock classes do not implement each and every element listed above. For further information contact the point of contact of the appropriate branch.

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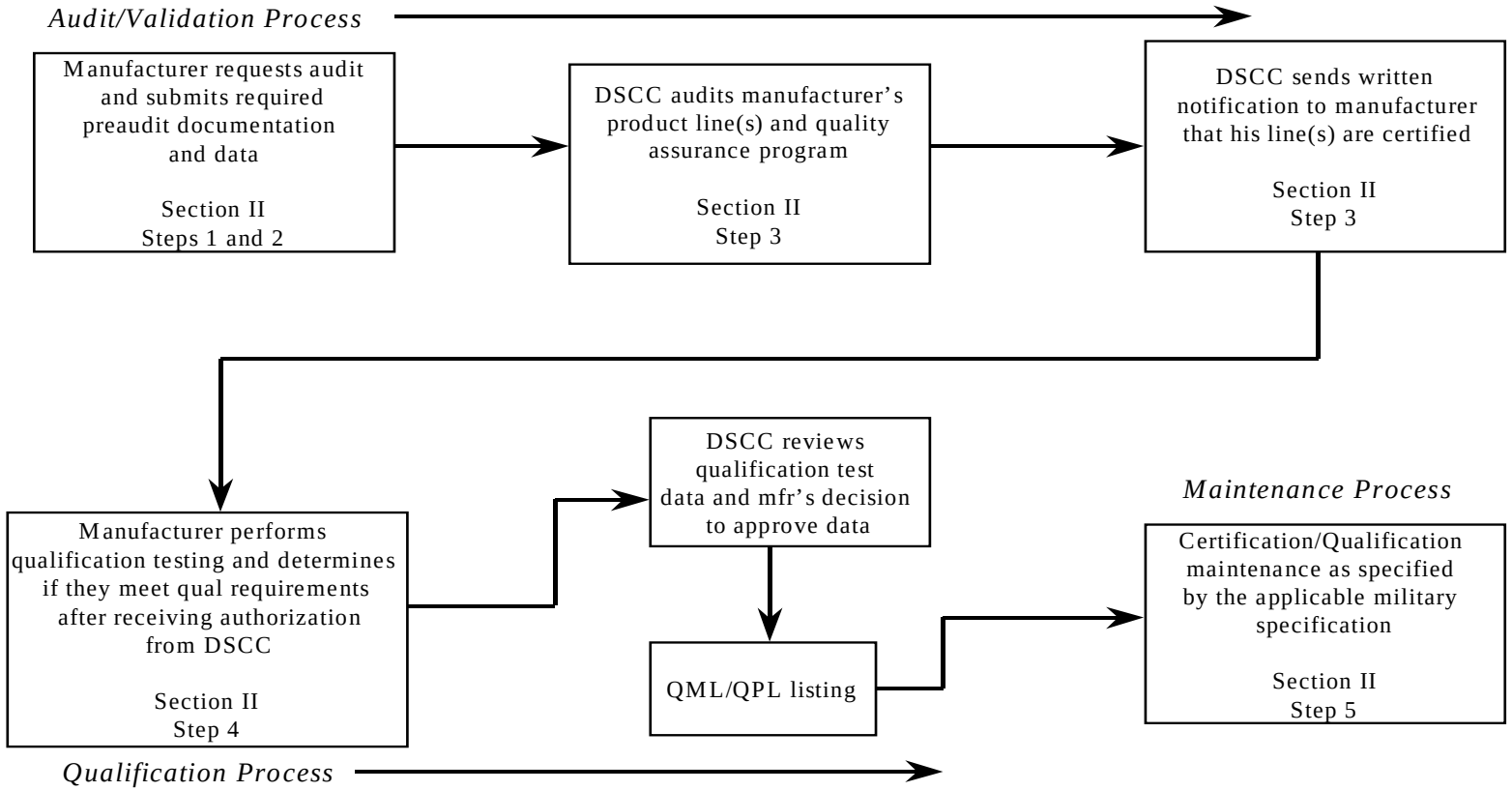
TYPICAL QML/QPL PRODUCT QUALIFICATION PROCESS FLOWCHART



SECTION III
CHANGE IN COMPANY NAME OR COMPANY OWNERSHIP

Change in company name.

When a company's name is changed, a letter must be immediately sent to DSCC-VQ specifying the applicable QPL/QML to be changed. The following information is required:

- Old name,
- New name,
- Specifications affected,
- Statements regarding any changes in:
  - ◊ Production machinery,
  - ◊ Production test equipment,
  - ◊ Manufacturing operations, processes, and locations,
  - ◊ Quality control, procedures, flow chart, product baseline,
  - ◊ Technical personnel and key supervisors,
  - ◊ Test laboratory location and facilities,
- DSCC-VQ may have the Government QAR verify the information.

Change in company ownership

When a company is sold, a letter from the company, to DSCC-VQ, with the following information is required:

- Name of company purchasing the plant,
- Effective date of transfer of ownership,
- A list of the qualified products involved,
- Disposition of qualified products in inventory,
  - Finished goods inventory (by part number, date code, and quantities)
  - All in process inventory (by lot number and quantities)
  - Complete traceability for all inventory throughout Wafer Fabrication, Assembly, and Test (i.e.,. Travelers, C of C's.)
- Statement of what the sale covers (e.g., all plant equipment, plant site, building, manufacturing and process specifications, patent rights, quality control system, etc.),

- Effective date the company will take control of the plant

- List of the qualified products that the purchasing company desires for transfer of qualification

- Any change that will be made in plant personnel, equipment, procedures, processes, flow charts, baselines, quality control procedures, etc.

- An agreement to furnish DSCC-VQ an estimated schedule of first lot production for each qualified product transferred

- An agreement to furnish DSCC-VQ data from the first production lot for each qualified item, produced under the new ownership within 30 days after completion of testing.

- DSCC-VQ may have the Government QAR verify the information.

Dependent upon the circumstances of the purchase, DSCC-VQ may require additional information, the first lot conformance inspection data as VQ-SOF-ribed above, or require partial or complete requalification. If the plant manufacturing facilities are to be moved after purchase, Section VI of this document will apply.

SECTION IV

EXTENSION OF QUALIFICATION TO ANOTHER PLANT LOCATION

Extension of qualification to other plants operated by the original qualified manufacturer for the same product when it has been determined by the qualifying activity (DSCC-VQ) that the product will be at least equal in all respects to the qualified product may be authorized. This determination can be made by one of the following:

- Complete qualification testing in accordance with Section II, Step 4, of this document, or

- Determination by DSCC-VQ that the manufacturing flow, product baselines, testing sequences and schedule, equipment, the quality programs and processing procedures for the two plants are identical. Under this option, a review is made of the company's quality program, quality control manuals, processing and material specifications, as well as a physical audit of the two plants. DSCC-VQ will inform the manufacturer of the specific qualification information required. Based on a review of this information and physical audit of the plants, DSCC-VQ will determine the qualification testing required to extend the product qualification to the new plant location.

SECTION V

DESIGN AND CONSTRUCTION CHANGES OR ALTERNATE CONSTRUCTION OF A QUALIFIED PRODUCT

A design and construction change is a permanent change in design, material, construction, processing, or baseline of a product after qualification has been granted. However, it does not include processing adjustments or variations that are necessary during production to hold a product's performance level. If any internal documentation (i.e., design drawing, processing specifications, product baseline, material specifications, etc.) is to be changed, other than editorial, the manufacturer must receive DSCC-VQ approval before shipping any product incorporating the major change unless otherwise authorized by DSCC-VQ. If there is a question, please contact DSCC-VQ for assistance. **This design and construction change procedure is critical for the military to maintain proper configuration control.**

An alternate construction is the same as a design and construction change, except that the manufacturer desires to supply both the new and old designs as qualified products. If permitted by DSCC-VQ the manufacturer is not to mix designs in the same lot. Furthermore, this option is permitted only when unique manufacturer's designations are available for each design, which will allow for proper product traceability. Shipment of product, incorporating a design and construction change or an alternate construction in a qualified product, prior to DSCC-VQ approval is a reason to remove the product from the QPL or QML. In addition, DSCC-VQ may require other actions (e.g. Product recall, GIDEP Alert) to assure that military hardware is not adversely impacted by the unauthorized product change.

Manufacturers desiring to make design and construction changes or use alternate construction will submit an application for qualification testing to DSCC-VQ. The following information will be included:

NOTE: If the manufacturer has an approved technology Review Board (TRB) some of the product changes may be reviewed and approved by the TRB themselves. Contact DSCC-VQ for questions on the TRB responsibility.

- VQ-SOF-ription of the exact change to be made including before and after photographs, baselines, processing specifications and documents, drawings, or samples which are necessary to show the change
- Reason for the change and the benefit to be obtained
- Expected change in product performance and flow, fit and function.
- Suggested test plan to verify changed product is still in full conformance with all applicable specification, drawing, and/or standards
- The date (i.e., first lot date code) on which the change or alternate construction is intended to be incorporated into production

DSCC-VQ will review the information and authorize complete or partial qualification testing, as applicable.

DSCC-VQ will review the design and construction change test report, and if found acceptable, a letter approving the change will be forwarded to the manufacturer. The changes may then be made in the qualified device by the manufacturer and QPL/QML products shipped. The manufacturer is required to send DSCC-VQ the manufacturer's lot code and date on which the change or alternate construction is effective. Samples from the first production lot may also be required to be provided to DSCC-VQ.

SECTION VI

PLANT MOVES AND TRANSFER OF QUALIFICATION

General

A qualified manufacturer planning to move a plant from one location to another must notify DSCC-VQ at least 90 days prior to closing down production at the listed plant location. This will provide the opportunity for DSCC-VQ personnel to observe the production operation before shutdown. Failure to provide sufficient advance notice and precluding the opportunity to observe production prior to shutdown, may result in removal of the manufacturer from the QPL/QML and require complete requalification of the products manufactured at the new plant location. A product recall or GIDEP alert may also be issued.

The following information is to be furnished with the notification concerning the plant move. Each item's status is to be identified as being definite or tentative.

- The address of the new plant location.

- A list of the qualified products, and/or processes or materials for which transfer of qualification is requested.

- A list of the qualified products, which will continue to be manufactured at the present plant location.

- A list of the products for qualification removal will be requested.

- The date when the plant location listed on the QPL/QML will discontinue complete or partial operation.

- Changes to be made if any, in:

  ◊ Production equipment,
  ◊ Product designs and baselines,
  ◊ Production test equipment,
  ◊ TCI (Technology Conformance Inspection) or QCI (Qualification Conformance Inspection) Equipment,
  ◊ Manufacturing operations, processes, and flow charts,
  ◊ Quality documentation and inspection procedures,
  ◊ Key personnel (including production supervisors, engineers, quality control personnel, test operators, management, and production).

  NOTE: Production of the qualified products require skilled labor; therefore, production line workers are considered key personnel.

- The target date (i.e., first lot date code) for initiating production of qualified products at the new plant location.

- Proposed qualification plan and an agreement to furnish DSCC-VQ qualification data. This may also include QCI or TCI data from the first production lots for each qualified item, produced in the new location. Samples from the first production lot may also be required to be provided to DSCC-VQ.

DSCC-VQ is to be notified as changes are made to the information furnished or as tentative items become definite in status. Products produced at the new plant location may not be represented as being qualified products until the manufacturer is notified by DSCC-VQ in writing that qualification has been transferred.

Plant Move Categories

Plant moves involving transfer of qualified products fall into the two following categories:

Category 1: These are moves where there are no significant changes in product baselines, manufacturing flows, equipment, testing, etc. other than the location of the plant. (Category 1 moves normally are short distance moves because the requirement for no changes in key personnel usually cannot otherwise be met. When long distance moves requires changes in key personnel, then this is considered category 2.)

Category 2: These are moves where there are changes in product designs baselines, equipment, manufacturing flows, testing, quality program documentation and procedures, or key personnel.

DSCC-VQ will determine, from the information furnished by the manufacturer which category of move applies. In addition, DSCC-VQ will determine whether additional information is needed from the manufacturer and whether or not DSCC-VQ audits at the old and new plant locations will be required.

Procedures for Category 1 (local and long distance move)

First DSCC-VQ must confirm if the move is in fact Category 1 and that all of the required information has been satisfactorily provided by the manufacturer. The manufacturer shall provide a proposed re-qualification plan, DSCC-VQ will notify the manufacturer if his re-qualification plan is acceptable. If deemed appropriate, DSCC-VQ may also send a letter to the appropriate DCMC office requesting that surveillance be provided prior to and at the completion of the move to verify that no other significant changes occurred, other than in location. DSCC-VQ will also send a letter to the manufacturer authorizing him to proceed with the move, but may require the move be coordinated with the appropriate DCMC office. After the move is completed, the manufacturer must notify DSCC-VQ, by letter, that all equipment (both test and production) has been installed, re-calibrated (if necessary), is fully operational, and is ready to produce qualified products. The first lot date code of product to be manufactured and the agreed upon qualification data will be provided to DSCC-VQ. The manufacturer must also certify by letter under signature of a responsible company official that no other significant changes have been made in the following:

- Product design and baselines
- Production equipment
- Test equipment (both test and production)
- TCI or QCI equipment
- Manufacturing flows operations and processes

- Quality program and inspection procedures
- Key personnel

DSCC-VQ may require this letter to be verified by the DCMC QAR. If the information furnished is considered satisfactory by DSCC-VQ, the manufacturer will be notified that he may begin producing product. DSCC-VQ will send an application for authorization to test, which will authorize the testing required for transfer of qualification. This testing will usually consist of the quality conformance inspection (QCI) or conformance inspection (CI) for the applicable military specification. The inspection data will consist the raw data (variables) generated under each device type or style to be transferred. However, depending on the number of device types or styles affected, their similarity to one another, and product complexity, a specially designed test plan may be proposed and coordinated between DSCC-VQ and the QPL/QML manufacturer. The qualification of the products will be transferred to the new plant location once the required data (verified by the DCMC QAR) has been found satisfactory by DSCC-VQ. DSCC-VQ determines if the move is Category 1 or 2. Then the appropriate procedures for transfer of qualification will be provided by DSCC-VQ. Each case will be decided on its own merit and extent of changes involved. Discussion between the manufacturer and DSCC-VQ is paramount to facilitate a smooth plant audit and transfer of qualification.

Procedure for Category 2

First DSCC-VQ determines if the move is Category 2. The manufacturer will provide a proposed re-qualification plan. DSCC-VQ will notify the manufacturer if his proposed re-qualification testing is acceptable for listing of the products produced at the new location. Normally, complete re-qualification of each device type or style affected is required. However, when a family of similar products is involved and their design, construction, and processing remain unchanged, this may permit a special test plan to be developed. Such reduced testing may be permitted because the design was proven by full qualification testing of all the various device types or styles at the original location and since they remain unchanged . Therefore, the full re-qualification of representative styles suffices to provide assurance of adequate control of the design in transfer to the new location. Approval to use a reduced testing plan for transfer of qualification in no way affects the applicable military specification requirements for CI or QCI and such requirements must be met in full for all applicable products. Category 2 plant moves usually result in a change of the product's failure rate level listed on the QPL for an Established Reliability (ER) specification. Detailed information concerning the impact on the failure rate level, resulting from a proposed ER plant move, may be obtained from DSCC-VQ. Each case will be decided on its own merit and extent of changes involved. Discussion between the manufacturer and DSCC-VQ is paramount to facilitate a smooth plant move and transfer of qualification.

CAUTION: Failure to notify DSCC-VQ prior to a Category 1 or Category 2 move is cause for immediate removal of the manufacture from the QPL/QML and other action (e.g. Product recalls, GIDEP alerts) as deemed appropriate.

SECTION VII

QUALIFICATION OF A PRODUCT REBRANDED BY A DISTRIBUTOR

Procedure for distributor using his own brand

- No one other than the original qualified manufacturers (i.e., manufacturer listed on the QPL) may place, alter, modify the "J " or JAN brand or designated military markings whatsoever. Except for those cases where the specification and DSCC-VQ specifically has authorized a distributor (usually applies only to a category C distributor), to mark qualified product, the following applies.

  •• The qualified manufacturer must forward to DSCC-VQ a letter that the distributor has been audited and authorized to rebrand and distribute the product with the distributors own brand designation. Upon receipt of the above letter by DSCC-VQ, the distributor may apply for qualification of rebranded product under one of the following applicable procedures:

  ••• Tested. The rebranded product has been examined and tested previously and has been qualified under the brand of the manufacturer. The distributor may seek qualification by forwarding to DSCC-VQ, a letter from the actual manufacturer of the product that the rebranded product is the same in all aspects as the product previously qualified under the manufacturer's designation.

  ••• Non-Tested. The rebranded product has **not** been examined and tested previously and has **not** been qualified under the brand name of the manufacturer, The distributor may seek qualification by performing complete qualification testing. All provisions herein apply as determined by DSCC-VQ. In addition, the manufacturer of the product must agree to the conditions under which qualification is granted. This is to be accomplished by his filling out and signing of an application for authorization to test (see section II) or equivalent and submitting it to DSCC-VQ.

In addition to the requirements of this section, distributors are bound by the requirements of paragraph 5.1.5 of MIL-STD-790, or the applicable quality program requirements incorporated into the applicable military specification and standards.

When the part specification requires the manufacturer's code to appear in the marking, the code will be that of the part manufacturer and not that of the distributor.

Caution: This section applies only to products listed on a valid QPL at the time of the rebrand request. It is extremely important that product pedigree is maintained throughout the process, by the manufacturer and distributor to make sure qualified product produced using all the qualified design baselines, manufacturing flows testing sequences schedules equipment, etc. are not mixed or otherwise contaminated with other non-qualified product.

SECTION VIII

TEST LABORATORY SUITABILITY

DSCC-VQ must determine the suitability of all testing performed or QPL/QML product. Consequently a DSCC-VQ suitability will be issued to all manufacturers or test laboratories that will be doing any QPL/QML product testing. NOTE: A laboratory may be either a manufacturers in house test facility or an independent testing laboratory. Calibration facilities and procedures must also be found suitable and in accordance with American National Standards Institute (ANSI)/National Conference of Standards Laboratories (NCSL) Z-540.3-2006-1, International Organization for Standards (ISO) 10012:2003 (part 1), or comparable standards. This is accomplished through DSCC-VQ review of procedures and records as well as an audit.

Suitability Process

Test laboratories, which are not a part of a manufacturing facility, require a QPL or QML sponsor in order to pursue laboratory suitability. The sponsor must be a valid QPL/QML manufacturer who certifies that they will use the laboratory for testing QPL/QML product. All QPL/QML testing shall be performed at a DSCC-VQ approved test facility (i.e., a manufacturer or test laboratory that has been granted a DSCC letter of suitability).

The goal of the suitability program is for DSCC-VQ to verify that the laboratory has implemented a working system that incorporates the necessary elements to perform testing in full compliance with the applicable test standards and military specifications. The responsibility for continuous compliance with the applicable test standard or test method rests with the manufacturer or laboratory. They are responsible for keeping abreast of all changes to the test methods and implementing them as required. To begin the lab suitability process, the manufacturers or laboratory must first contact DSCC-VQ. DSCC-VQ will then send a pre-audit letter, which specifies what the laboratory must submit to DSCC-VQ prior to scheduling an audit.

The pre-audit letter is intended to ensure the following items are addressed:

- The laboratory has the proper sponsorship.
- The manufacturer or laboratory test facility has a current (implemented) and effective quality program.
- The manufacturer or laboratory test facility has an internal test procedure for each test method which demonstrates knowledge of the military test standard and that the test procedures are in full compliance with the applicable test method.
- The manufacturer or laboratory testing facility has a documented and controlled operation.
- The manufacturer or laboratory test facility is meeting his own internal requirements as well as the military requirements.

- The manufacturer or laboratory test facility has a self audit program. The self audit program indicates that the manufacturer or laboratory has an internal program to assess the effectiveness of the manufacturer's quality program to assure continuous compliance to the applicable test method. An effective self audit increases DSCC-VQ confidence on the manufacturer's or laboratories quality program, thus resulting in the benefit of reduced DSCC-VQ oversight.

DSCC-VQ personnel will review the preaudit information submitted by the laboratory. The laboratory will be notified if additional information, corrections, etc., are needed. As soon as the required information is complete, a date for an audit of the qualification test facility must be established.

At the time of the audit, all test equipment and standards on the lists must be available for inspection. The company shall prepare an internal test procedure for each test method. These internal test procedures shall translate the military test method into company language applicable to the specific test equipment being used. These internal test procedures will be reviewed during the audit to assure understanding and compliance to the applicable military test standard. Test personnel must be available to operate the equipment. All operating instructions and calibration records must be up-to-date and available for review.

The internal testing procedures and actual test standard will be reviewed and discussed during the audit for compliance to the applicable military test standard. At the conclusion of the audit, any deficiencies will be discussed with the appropriate company personnel. Deficiencies requiring correction will be listed on a DSCC Audit Results form, VQ-SOF-78 and a copy will be left with the company. As soon as the deficiencies are corrected, a report of the corrective actions will be sent to DSCC-VQ. If the corrective actions are acceptable, a laboratory suitability letter will be issued to the company. The suitability letter applies only to the specific test method listed in the DSCC-VQ laboratory suitability letter and test equipment listed on the test facility's forms.

Test laboratories, which are not a part of a manufacturing facility, require a QPL or QML sponsor in order to pursue laboratory suitability. All testing shall be performed at a DSCC-VQ approved test facility.

Suitability

- Suitability is evidence by an official DSCC-VQ suitability letter, which is issued for a specific military test method in the applicable test standard. Unless the manufacturer or test laboratory has a DSCC-VQ laboratory suitability letter for a specific test method, he is not suitable to perform testing to the specific test method. **Only a manufacturer or laboratory with an official DSCC letter of suitability may test QPL/QML product.**

- Anytime a specification, purchase order, contract etc. specifies or references a particular military test method then the manufacturer or test laboratory must fully comply with the military test method as stipulated in the DSCC-VQ laboratory suitability letter and in full conformance with the DSCC-VQ approved procedures and applicable test standard. Any deviations, modifications, etc. would require a written waiver from the customer. However, under no circumstances whatsoever can a waiver be granted to the test laboratory for any military (e.g.. JAN branded, QPL, QML) products.

Lab Suitability Information

For complete information on how to obtain Lab Suitability contact the DSCC-VQ POC for your particular technology area. A Laboratory Suitability booklet is available which VQ-SOF-ribes the suitability program in more details. A copy of the laboratories suitability booklet and the listing of laboratories that have been issued a DSCC suitability is available on the DSCC-VQ web page.

SECTION IX

FOREIGN QUALIFICATION

The restriction for manufacturing High Reliability military product in the United States was removed from DoD 4120.24. Therefore manufacturing of QPL/QML products can occur in domestic or offshore facilities for either foreign or U.S. owned facilities/companies provided the manufacturing facility is audited by DSCC-VQ, the product and/or processes and materials are qualified and all the provisions of the U.S. specifications are met. There may still be some selected restrictions in the specifications or imposed by DSCC-VQ on selected piece parts assembly operations, so DSCC-VQ should be consulted. The manufacturer will be required to certify/qualify their foreign facilities and products prior to moving, expanding and/or initiating any production at a foreign facility. In addition, all DSCC-VQ audits performed at a foreign facility will be conducted at the manufacturers' expense (i.e., DSCC-Finance Office will bill for all travel cost associated with the audit). The manufacturer will be required to agree to reimburse DSCC prior to the audit.

Listing of Foreign Products on U. S. QPL/QMLs

- Certain countries (e.g., NATO Countries, Canada, Ireland, Australia and Israel) have ratified International Standardization Agreements (ISA) with the United States. In these cases, the manufacturers must apply to DSCC-VQ for qualification through that countries National Qualifying Activity (NQA). DSCC-VQ coordinates and works with the other countries NQAs as the qualification process unfolds. The other countries NQA will ultimately assume the DSCC-VQ Qualifying Activity role with oversight by DSCC-VQ.

- For countries not covered by a ratified International Standardization Agreement the manufacturer located in that country must apply directly to DSCC-VQ for qualification. DSCC-VQ will perform all qualification activity functions (e.g., audits, data reviews, etc.) directly with the manufacturer.

Listing of U.S. Products on Foreign QPL/QMLs

For U.S. manufacturers desiring the US QPL/QML listing also listed on the QPL/QMLs of countries with whom the U.S. has international qualification agreements (U.S. - Australia, U. S. - Canada, NATO STANAG 4093), the following applies:

NOTE: DSCC-VQ is the designated U.S. National Qualification Authority (NQA) for Electronics and some hardware classes.

- Australia. The Australian Department of Defense has adopted the U.S. QPL/QMLs. Therefore, requests for approval and listing on the Australian QPL/QMLs is no longer required.

- Canada. Except for FSC 5960 (Electron Tubes), the Canadian Department of Defense has adopted the U.S. QPL/QMLs. Therefore, requests for approval and listing on the Canadian QPL/QMLs is no longer required. For FSC 5960, the procedures outlined below apply.

- All Others. For all other countries, the manufacturer of the qualified products may submit a written request to DSCC-VQ for assistance in getting their products considered for inclusion on the

QPL/QMLs of another country. DSCC-VQ will inform the manufacturer of the specific information required by that country. For example, the information required may include items such as:

- A copy of the DSCC-VQ authorization letters under which the qualification tests were performed.
- A copy of the DSCC-VQ notification of qualification letter that granted the qualification.
- A copy of the test report providing the basis for DSCC qualification and listing on the U.S. QML/QML.
- A copy of the latest summary of Groups A, B, and C, QCI or CI data.

DSCC-VQ verifies that the products are listed or approved for listing on the applicable U.S. QPL/QMLs. Then the manufacturer's requests and required information is forwarded to the applicable country by DSCC-VQ. DSCC will monitor the qualification request as it is processed by the foreign NQA. Qualification by the country is not automatically granted just because the products comply with the requirements of the U.S. specification and is listed on the U.S. QPL/QMLs.

Manufacturers desiring listing on the QPL/QMLs of countries with whom the U.S. does not have international qualification agreements are to communicate directly with the National Qualification Authorities of those countries.

Manufacturers desiring to qualify to a foreign QPL or QML should communicate directly with the NQA of that country.

SECTION X

NEW INITIATIVES IN THE QUALIFICATION PROGRAM

Many new areas are being pursued by DSCC-VQ to ensure that the manufacturers and the product users are able to take advantage of new technology and manufacturing approaches.

These changes will benefit the users from either a cost savings standpoint or an increase in quality and reliability, shorter delivery cycle, or increased logistics support of the system.

All changes are reviewed to ensure that the needed product quality and the reliability levels are not jeopardized and that the current system requirements are maintained.

Listed below are the areas that are currently allowed by some of the product qualification programs:

NOTE: DSCC-VQ encourages all QPL/QML manufacturers to develop proposals and discuss with DSCC-VQ ways to implement these innovations.

- Elimination of end of line testing based on SPC.
- Elimination of end of line testing based on in process monitors or failure history data.
- Implementation of parts per million (ppm) testing to provide maximum failure rate data.
- Approval of third party (outside vendor) processing for a qualified manufacturer. Two examples of operations performed outside are design and assembly.
- Adoption of best commercial practices as part of a military product flow.
- Allowances for a manufacturer to establish a Technology Review Board (TRB) with the responsibility for approving manufacturing changes, qualifying new facilities/lines, and business decisions with little government intervention.
- Use a single qualification and quality program for all product types (i.e., commercial, industrial and military).
- Use of commercial data whenever possible.
- Reduction of periodic DSCC-VQ audits based on company performance and self audit program.

Listed below are some additional areas, which are being implemented in the qualification program:

- Qualification of plastic packages for military systems.
- Third party wafer fabrication, design, assembly and test for QPL/QML.
- Additional class levels to potentially offer entire product line as QPL/QML.

QML (Qualified Manufacture List) Philosophy

This new approach is basically a validation (on a confidence level) that the company is well managed and technically sound enough to produce high grade military product and compete as a “world class” manufacturer with a minimum amount of oversight from the government.

We are taking advantage of the fact that U.S. manufacturers understand that it is in their best interest to produce high quality product through process controls and continuous improvement. A company can no longer survive in a global market by “just meeting the spec.”

All the above highlighted initiatives are being employed under the QML program as tools to infuse “Best Commercial Practices” and flexibility into the DoD Qualification Program. We qualify suppliers not supplies.

SECTION XI

QUALIFICATION FORMS

VQ-SOF-86 (Fm 2)	Commercial Laboratory Application for Suitability Status
VQ-SOF-87 (Fm 19H)	Application for Authorization to Test
VQ-SOF-88 (Fm 19E)	Application for Authorization to Test
VQ-SOF-89 (Fm 19P)	Application for Authorization to Test
VQ-SOF-90 (Fm 19W)	Application/Authorization to Conduct Qualification Test
VQ-SOF-91 (Fm 36)	List of Qualification Test Facilities or List of Quality Conformance Test Facilities
VQ-SOF-92 (Fm 36D)	Design and Construction Information, Semiconductors
VQ-SOF-93 (Fm 36F)	Qualification Test Report at a Non-Government Test Laboratory
VQ-SOF-94 (Fm 617)	Summary of Conformance Inspection Test Results (MIL-PRF-19500)
VQ-SOF-95 (Fm 674)	Life Test Summary Data (Resistors)
VQ-SOF-96(Fm 674A)	Maintenance of FR Level - Life Test Summary - Unit Hours
VQ-SOF-97 (Fm 674B)	Extension of FR Level - Life Test Summary - Unit Hours
VQ-SOF-98 (Fm 695)	Cross Index of Calibration System Requirements (ISO 10012:2003 or ANSI/NCSL Z540.3-2006 vs Company Documentation)
VQ-SOF-99 (Fm 696)	Cross Index of Reliability Assurance Program Requirements (MIL-STD-790 vs Company Documentation)
DD Form 1718	Certification of Qualified Products

NOTE: The above forms can be obtained from the DSCC-VQ web page.

SECTION XII

QPL/QML REMOVAL CONDITIONS

Conditions. A manufacturer may be removed from the QPL/QML by DSCC for any of the reasons listed in DOD 4120.24, SD-6, and examples listed below.

a. The TRB manufacturer fails to make status reports available to DSCC, or the non-TRB manufacturer has failed to comply with the requirements for qualification retention.

b. The manufacturer's TRB fails to maintain the manufacturer's certified quality management program and baseline process flow.

c. The non-TRB manufacturer fails to notify DSCC of a change in design, material, manufacturing facility, process, or fabrication line when required to by their quality management system.

d. Failure to notify DSCC immediately after learning of a potential issuance of GIDEP alert on their QPL/QML product by an OEM or user.

e. The manufacturer has terminated manufacturing the technology for which a QPL/QML listing was granted.

f. The manufacturer requests removal from the list.

g. One or more of the major conditions under which certification and qualification were granted have been violated.

h. The manufacturer's QPL/QML product does not meet the quality, reliability, or performance requirements of the product or commodity specification, (e.g., MIL-PRF-19500) and the manufacturer is unable to implement a suitable corrective action plan to return the product to compliance.

i. An audit of manufacturing plant indicates major nonconformance to the applicable specification.

j. The manufacturer's name appears on the "Consolidated List of Debarred, Ineligible, and Suspended Contractors."

k. Products or materials offered under contract do not meet the requirements of the device acquisition specification.

l. Failure of a manufacturer or laboratory to notify DSCC-VQ of a change in design, material, product baselines, manufacturing location, certified procedures and processes.

QML Removal Process. Excepting cases of immediate removal for reasons e, f, g, and j, the manufacturer will be notified of the proposed removal of his company from the list and the reasons for removal, and be granted at least 14 days from the date of the notifying letter in which to respond. The manufacturer will be invited to furnish comment. If determination is made to remove a company from the list, the manufacturer will be sent a notification of removal and his company will be deleted from the QPL/QML without delay.

SECTION XIII

ADVERTISEMENT VIOLATIONS

Advertisement violations are encompassed by the 15 U.S.C. Section 45 (a)(1). Such statute prohibits "unfair methods of competition" and "unfair" or "deceptive acts or practices", construed by the courts to include misrepresentations made in advertising which are inherently capable of deceiving the public.

The manufacturer may not advertise in a manner that would be unfair or deceptive to the public. As examples, the manufacturer shall not:

- Advertise that his qualified products or processes and materials are the only one of its type qualified or that the DoD in any way recommends or endorses the manufacturer's product in preference to the other qualified product.

- Advertise in a manner that would lead readers to believe his products are qualified when that is not the case. Case law has specifically held that a claim that a product meets or conforms to certain government specifications when such is not the case is illegal. Products, which are advertised as meeting designated specifications, must be capable of objectively satisfying all the requirements of such specifications, including qualification. If a basic requirement of military specification approval is that the product be qualified and covered by the appropriate QPL/QML, then, any claim of conformity or approval to a military specification is viewed as equal to a claim of having QPL/QML status, and such misrepresentations are viewed as deceptive, and are violations of the referenced statute. DSCC has taken the further position that anyone reading an advertisement that references a military specification that contains a QPL/QML requirement will readily assume that mention of approval or conformance to a military specification in advertising, without a disclaimer, implies a QPL/QML product is involved (i.e., one monitored and controlled by DSCC or the military specification is referenced which contains QPL/QML requirements). Accordingly, a disclaimer statement should appear whenever a military specification is referenced which contains QPL/QML requirements. The disclaimer should be clearly visible, easily readable, and in close proximity to the reference to the military specification in question. It should specifically state that your facility has **not** been certified under the cognizance of DSCC-VQ and the devices are not covered by the QPL/QML.

Continuing such advertising violations may result in the issuance of a complaint against your company by the Federal Trade Commission, leading to an order to cease and desist from such practices. The statuary penalty for continued advertising contrary to such an order is a $10,000 fine for each subsequent violation. Thus, manufacturers must avoid such deceptive advertisements and promptly correct any such prohibited advertising misrepresentations to prevent the imposition of such a penalty.

If a company has an advertisement violation, prompt action is necessary to correct the referenced misstatements. The company will be required to provide DSCC-VQ with actions taken to correct this situation. This may be accomplished by immediately retracting the advertisement and/or by notifying all users that your devices are not covered by the QPL/QML. Failure to accomplish this is justification for removal from the QPL/QML and/or referral to the Federal Trade Commission.

SECTION XIV

USER ADVANTAGES TO PROCURING QPL/QML PRODUCT

- A common base for bid exists between qualified manufacturers, which assures they have, at least, the minimum required capabilities. Without QPL/QML the bid process is very complex, especially for electronic parts because of the wide spectrum of product grades being marketed by the manufacturers for the same functional part type.

- Contractual requirements are considerably reduced because the QPL/QML vendor has a built-in system for compliance to the applicable military specification.

- Audits may be reduced since DSCC-VQ is performing comprehensive technical audits.

- A central location provides information to all parties concerning the requirements and the status of the manufacturers.

- The QPL/QML products offer the standardized advantage, making reprocurements simple.

- No long start up times exist since preaward surveys, first article testing are not required also since the qualification testing has already been performed. QPL/QML parts are available through the distribution chain.

- Cost reductions through continuous improvement and the development of one system of manufacturing should be available to you.

- One program provides commercial and military applications to meet all your needs.

- A wide variety of qualified products are available to you.

- Parts are qualified one time, which reduces engineering cost and resources.

- Assurance that the products will meet a well defined (by specification and standards) and controlled performance, quality and reliability envelope.

- Assurance that the products are being monitored by the qualifying activity (DSCC-VQ). The qualifying activity will act as an advocate for the user to resolve technical questions or problems. DSCC-VQ has the authority to audit all areas at a QPL/QML facility in order to address/resolve problems.

- No need to develop and maintain specifications, drawings or standards for each system.

- Configuration control is maintained for all QPL/QML part numbers.

SECTION XV

ADVANTAGES IN BECOMING A QPL/QML QUALIFIED MANUFACTURER

- One qualification to demonstrate your products can meet military performance, quality and reliability requirements. OEMs usually do not feel the need to perform independent and redundant qualifications.
- QPLs and QMLs are sent to numerous military users. Consequently your product offerings get worldwide visibility.
- Yields can improve as well as the overall quality and reliability of your product.
- One Process flow can be used for manufacturing both commercial and military products. This saves you engineering time and reduces your costs.
- You are recognized worldwide as a manufacturer of high reliability electronic components.
- You receive the services of a recognized body of experts (DSCC).
- Number of audits are reduced since OEMs usually do not feel the need to perform audits.
- Reduce “non-value-added ” end-of-line tests as your statistical process controls warrant.
- You can use best commercial practices that best fit your business methodology. This is especially true for the QML program.
- Qualification testing is reduced since it does not have to be performed for every customer.
- Customers, program offices', and government agencies' confidence is increased since they participate in the QPL/QML Program.
- One agency (DSCC-VQ) provides enforcement of the QPL/QML requirements. You have a single contact point for questions and problem resolution.
- You will have flexibility to make changes and improve processes.
- You will have better visibility into your own operations.
- Greater control and reproducibility will be yours.

SECTION XVI

DEFENITIONS/ABBREVIATIONS AND/OR ACRONYMS

AMSC	Acquisition Management System Control
AMSDL	Acquisition Management Source Data List
ASD (P&L)	Assistant Secretary of Defense (Product and Logistics)
CAGE	Commercial and Government Entity
CI	Conformance Inspection
CID	Commercial Item Description
CIRL	Completed Item Reduction Listing
DASD (PR)	Deputy Assistant Secretary of Defense (Production Resources)
Dep SO	Departmental Standardization Office
DFARS	Defense Federal Acquisition Regulation Supplement
DID	Data Item VQ-SOF-ription
DLA	Defense Logistics Agency
DLIS	Defense Logistics Information System
DSSC	Defense Supply Center Columbus
DNA	Defense Nuclear Agency
DOD	Department of Defense
DoDISS	DoD Index of Specifications and Standards
DoDSSP	DoD Single Stock Point
DSP	Defense Standardization Program
FAR	Federal Acquisition Regulation
FII	Federal Item Identification
FIIG	Federal Item Identification Guide
FPMR	Federal Procurement Management Regulation
FSC	Federal Supply Class
FSG	Federal Supply Group
GIDEP	Government Industry Data Exchange Program
GSA	General Services Administration
ICP	Inventory Control Point
ISA	International Standard Agreement
ISC	Item Standardization Code
ISO	International Organization for Standards
LSA	Lead Standardization Activity
MCA	Military Coordinating Activity
MOE	Major Organizational Entity
NATO	North Atlantic Treaty Organization
NCA	National Coordinating Activity
NDI	No developmental Item
NGS	Non-Government Standard

DEFENITIONS/ABBREVIATIONS AND/OR ACRONYMS, continued

NGSB	Non-Government Standards Body
NIIN	National Item Identification Number
NQA	National Qualification Authority
NSA	National Security Agency
NSN	National Stock Number
OASD (P&L) SPD	Office of the Assistant Secretary of Defense (Production and Logistics) Standardization Program Division
OSD	Office of the Secretary of Defense
QAR	Qualifying Activity Representative
QCI	Quality Conformance Inspection
QML	Qualified Manufacturers List
QPL	Qualified Products List
PDASD (P&L)	Principal Deputy Assistant Secretary of Defense (Production and Logistics)
PI	Periodic Inspection
PICA	Primary Inventory Control Activity
PSCN	Permanent System Control Number
SMA	Standardization Management Activity
SPD	Standardization Program Division
STANAG	Standardization Agreement (NATO)
TCI	Technology Conformance Inspection
TCV	Technology Characterization Vehicle
TIR	Total Item Record

CERTIFICATION – A DSCC-VQ letter that is issued to show that the manufacturer has demonstrated to DSCC-VQ that an implemented quality management (QM) system and a baseline process flow is established and is in compliance to all specified requirements.

LAB SUITABILITY – A DSCC-VQ letter that is issued to a manufacturer or test laboratory to show that the manufacturer or laboratory has the capability to test in house to the applicable test methods such as; MIL-STD-883 for microcircuits, MIL-STD-750 for semiconductors, MIL-STD-202 for passive components, or other applicable test standards.

QUALITY CONTROL PROCEDURE - A procedure providing a formal framework in a company, which clearly establishes organizational structure, responsibilities, processes, procedures, clear reporting lines, skills and knowledge, goals, standards and resource.

PRODUCT BASELINE - This is a list of documented design, materials, processes and construction techniques that will be used to produce QPL/QML product.

FLOW CHARTS - A diagram consisting of a set of symbols (as rectangles, diamonds or circles

etc.) and connecting lines that shows step-by-step progression through a usually complicated set procedure or system.

SCREENING - This is 100% testing, normally referred to as Group A testing, that all QPL/QML products must pass prior to shipment. The screens are specified in the applicable military specification.

SELF AUDIT - The performance of periodic surveys and reviews by the device manufacturer's designated personnel to evaluate compliance to military specifications, customer, and internal requirements.

QUALIFYING ACTIVITY (QA) - The qualifying activity is the responsible organizational element of the government with the authority that grants certification and QPL/QML status. DSCC-VQ is the QA for most electronic QPL/QMLs and many hardware items. The applicable specification will show who is the QA.

SPECIFICATION PREPARING ACTIVITY (PA) - The specification preparing activity is the organizational element of the government with the responsibility and authority for the preparation and maintenance of standardization documents.

SPECIFICATION - A document prepared to support acquisition that VQ-SOF-ribes the essential technical requirements for purchased materiel and the criteria for determining whether those requirements are met.

STANDARD - A document that establishes uniform engineering and technical requirements for processes, procedures, practices, and methods. Standards may also establish requirements for selection, application, and design criteria of materiel.

QUALITY CONFORMANCE INSPECTION (QCI) – These are periodic sample tests that all QPL/QML products must pass. The QCI test and frequency are specified in the applicable military specification.

TECHNOLOGY CONFORMANCE INSPECTION (TCI) – These are periodic sample tests that all QML products must pass on a continuous periodic basis. The TCI tests are specified in the applicable military specification. Sometimes these are Conformance Inspection (CI).